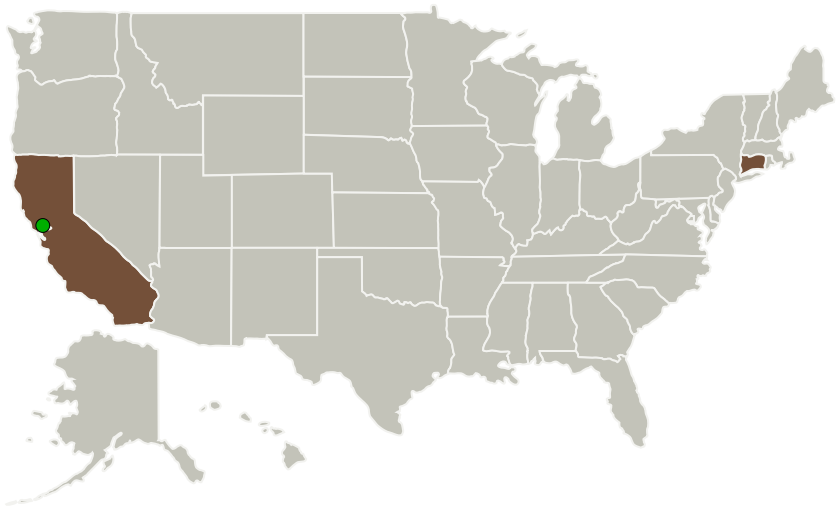
Low Gravity Drug Stability Analyzer, Phase II

Completed Technology Project (2014 - 2018)

Project Introduction

The goal of this proposed program through Phase III is to build a space-worthy Drug Stability Analyzer that can determine the extent of drug degradation. It will be able to monitor the drug active pharmaceutical ingredient (API) and its degradation product concentrations as a function of time, as well as determine if a drug is suitable for use. This will be accomplished by designing and building a rugged, small, low mass, low power, easy to use analyzer that can identify and quantify API and degradation products with little or no sample handling in 1 minute. Feasibility was successfully demonstrated during Phase I by measuring acetaminophen, azithromycin, epinephrine, lidocaine, and their degradation products in mixtures and during reaction with a 1-4% limit of detection. The API's were also successfully measured in commercial products. During the Phase II program a prototype Drug Stability Analyzer, suitable for space deployment will be built and used to measure the degradants of all the ISS medical kit drugs (>100) with an accuracy goal of 2% and a precision goal of 1% within 1 minute. The Drug Stability Analyzer will be transitioned from a TRL 3 to a 7 (ground tested).

Primary U.S. Work Locations and Key Partners



Low Gravity Drug Stability Analyzer, Phase II

Table of Contents

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
Real-Time Analyzers, Inc.	Lead Organization	Industry	Middletown, Connecticut
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

Primary U.S. Work Locations	
California	Connecticut

Project Transitions

May 2014: Project Start

June 2018: Closed out

Closeout Summary: Low Gravity Drug Stability Analyzer, Phase II Project Image

Closeout Documentation:

- Final Summary Chart Image*(https://techport.nasa.gov/file/137619)*

Images

Briefing Chart Image
Low Gravity Drug Stability Analyzer, Phase II
(https://techport.nasa.gov/image/127785)

Final Summary Chart Image
Low Gravity Drug Stability Analyzer, Phase II Project Image
(https://techport.nasa.gov/image/131345)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Real-Time Analyzers, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Stuart Farquharson

Co-Investigator:
Stuart Farquharson

Low Gravity Drug Stability Analyzer, Phase II

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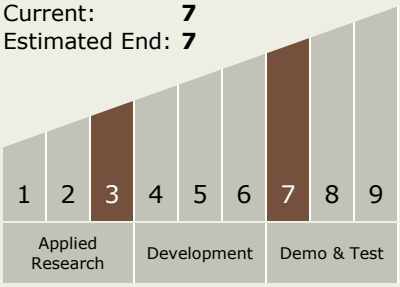
Technology Maturity (TRL)

Start: **3**
Current: **7**
Estimated End: **7**



Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.3 Human Health and Performance
    - TX06.3.1 Medical Diagnosis and Prognosis

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System